



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
HOUSTON BRANCH  
10625 FALLSTONE RD.  
HOUSTON, TEXAS 77099

January 12, 2016

### MEMORANDUM

**SUBJECT:** Contract Laboratory Program Data Review

*Raymond Flores*  
**FROM:** Raymond Flores, Alternate ESAT Regional Project Officer  
Environmental Services Branch (6MD-HL)

**TO:** Katrina Coltrain, Remedial Project Manager (6SF-RL)

**Site:** WILCOX OIL

**Case#:** 45671

**SDG#:** MF6R18

The EPA Region 6 Environmental Services Branch ESAT data review team has completed a review of the submitted Contract Laboratory Program (CLP) data package for the referenced site. The samples analyzed and reviewed are detailed in the attached Regional data review report.

The data package is acceptable for regional use. Problems, if any, are listed in the report narrative. If you have any questions regarding the data review report, please contact me at (281) 983-2139.

# **ENVIRONMENTAL SERVICES ASSISTANCE TEAM**

ESAT Region 6  
10625 Fallstone Road  
Houston, TX 77099

**Alion Science and Technology**

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## **MEMORANDUM**

DATE: January 11, 2016

TO: Marvelyн Humphrey, ESAT PO, Region 6 EPA

FROM: Linda Hoffman, Data Reviewer, ESAT

THRU: Dominic G. Jarecki, ESAT Program Manager, ESAT *063*

SUBJECT: CLP Data Review

Contract No.:	EP-W-13-026
TO No.:	002
Task/Sub-Task:	2-12
ESAT Doc. No.:	1602-212-0009
TDF No.:	6-16-114A
ESAT File No.:	I-0678

Attached is the data review summary for Case # 45671

SDG # MF6R18

Site Wilcox Oil

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 REGION 6  
 HOUSTON BRANCH  
 10625 FALLSTONE ROAD  
 HOUSTON, TEXAS 77099

INORGANIC REGIONAL DATA ASSESSMENT

CASE NO.	45671	SITE	Wilcox Oil
LABORATORY	BON	NO. OF SAMPLES	10
CONTRACT#	EP-W-14-029	MATRIX	Soil
SDG#	MF6R18	REVIEWER (IF NOT ESB)	ESAT
SOW#	ISM02.3/MA 2542.1	REVIEWER'S NAME	Linda Hoffman
SF#	303DD2GG	COMPLETION DATE	January 11, 2016

SAMPLE NO.	MF6R18	MF6R23	MF6R27		
	MF6R20	MF6R24	MF6R28		
	MF6R21	MF6R25			
	MF6R22	MF6R26			

DATA ASSESSMENT SUMMARY

	ICP-AES	ICP-MS	HG	CN
1. HOLDING TIMES	O	O	O	O
2. CALIBRATIONS	O	O	O	O
3. BLANKS	O	O	O	O
4. MATRIX SPIKES	O	O	O	O
5. DUPLICATE ANALYSIS	O	M	O	O
6. ICP QC	O	O	N/A	N/A
7. LCS	O	O	N/A	N/A
8. SAMPLE VERIFICATION	O	O	O	O
9. OTHER QC	N/A	N/A	N/A	N/A
10. OVERALL ASSESSMENT	O	M	O	O

O = Data had no problems.

M = Data qualified due to major or minor problems.

Z = Data unacceptable.

NA = Not applicable.

**ACTION ITEMS:** The laboratory analyzed the thallium LCS at 10X the MA 2542.1 CRQL instead of 2X.

**AREAS OF CONCERN:** ICP-MS The laboratory duplicate difference for lead exceeded the expanded QC limit for soils.

COMMENTS/CLARIFICATIONS  
REGION 6 CLP QA REVIEW

CASE 45671 SDG MF6R18 SITE Wilcox Oil LAB BON

**COMMENTS:** This SDG consisted of ten soil samples for total metals (by ICP-AES and ICP-MS), mercury, and cyanide analyses following SOW ISM02.3. The samples were also subject to Modified Analysis Request 2542.1 (MA 2542.1), which requested a lower CRQL for thallium. The sampler designated sample MF6R25 for QC analyses.

The SOW requires that the soil sample results be adjusted for moisture content, which raised the adjusted QLs above the CRQLs specified in the SOW and MA 2542.1. The adjusted CRQLs were reported by the laboratory and are referred to as SQLs in this report.

The target analytes of concern with the MA 2542.1 CRQLs in parentheses are antimony (1.0 mg/kg), arsenic (0.5 mg/kg), cadmium (0.5 mg/kg), chromium (1.0 mg/kg), cobalt (0.5 mg/kg), selenium (2.5 mg/kg), and thallium (0.25 mg/kg). The analytes of concern reported at concentrations above the MA 2542.1 CRQLs were arsenic, chromium, and cobalt in all samples. The laboratory reanalyzed samples MF6R21 and MF6R22 at the required 2X dilution because the %RIs for IS Sc-45 were above the QC limit in the undiluted analyses of these two samples. The dilutions had acceptable %RIs for IS Sc-45, so the laboratory reported the results associated with IS Sc-45 from the diluted analyses. The laboratory also diluted (up to 15X) and reanalyzed samples MF6R22, MF6R24, and MF6R28 because of high copper or lead concentrations.

S3VEM Review was performed for this package as requested by the Region. For this review option, laboratory contractual compliance and technical usability of the sample results are primarily determined by the EDM CCS Defect Report and NFG Data Review Results Report, respectively. The reviewer performs supplemental hardcopy forms checking and applies Region 6 guidelines, where necessary, to account for known limitations of the electronic review process. Therefore, the reviewer's final assessments may deviate from those found in the EDM reports. The NFG Data Review Results Report for the SDG is attached to this report as an addendum for additional information.

**OVERALL ASSESSMENT:** The lead results for all samples were qualified because of a problem with inconsistent laboratory duplicate results. ESAT's final data qualifiers in the DST indicate the technical usability of all reported sample results. An Evidence Audit was conducted for the CSF, and the audit results were reported on the Evidence Inventory Checklist.

The laboratory was contacted for some CSF and reporting issues (see Resubmission Request). The laboratory resubmission will not impact the DST, so the DST included is the final version.

## INORGANIC ACRONYMS

CCB	Continuing Calibration Blank
CCS	Contract Compliance Screening
CCV	Continuing Calibration Verification
CN	Cyanide
CRQL	Contract Required Quantitation Limit
CSF	Complete SDG File
DST	Data Summary Table
EDM	EXES Data Manager
HG	Mercury
ICB	Initial Calibration Blank
ICP	Inductively Coupled Plasma
ICP-AES	Inductively Coupled Plasma-Atomic Emission Spectroscopy
ICP-MS	Inductively Coupled Plasma-Mass Spectrometry
ICS	Interference Check Sample
ICV	Initial Calibration Verification
IS	Internal Standard
LCS	Laboratory Control Sample
MDL	Method Detection Limit
NFG	National Functional Guidelines
PE	Performance Evaluation
%D	Percent Difference
%R	Percent Recovery
%RI	Percent Relative Intensity
%RSD	Percent Relative Standard Deviation
QA	Quality Assurance
QC	Quality Control
QL	Quantitation Limit
RPD	Relative Percent Difference
RSCC	Regional Sample Control Center
S3VEM	Stage 3 Validation Electronic and Manual (previously called Modified CADRE Review)
S4VEM	Stage 4 Validation Electronic and Manual (previously called Standard Review)
SDG	Sample Delivery Group
SMO	Sample Management Office
SOW	Statement of Work
SQL	Sample Quantitation Limit
TAL	Target Analyte List

## HEADER DEFINITIONS FOR INORGANIC EXCEL DST

CASE: Case Number  
SDG: SDG Number  
EPASAMP: EPA Sample Number  
LABID: Laboratory File/Sample ID  
MATRIX: Sample Matrix  
QCCOD: Sample QC Code  
SMPQUAL: Sample Qualifier  
ANDATE: Sample Analysis Date  
ANTIME: Sample Analysis Time  
CASNUM: Compound CAS Number  
ANALYTE: Compound Name  
CONC: Compound Concentration  
VALDQAL: Region 6 Inorganic Data Validation Qualifier (see  
Inorganic Data Qualifier Definitions on the next page)  
UNITS: Concentration Units  
ADJCRQL: Adjusted Contract Required Quantitation Limit Value  
SMPDATE: Sampling Date  
PRPDATE: Sample Preparation Date  
LRDATE: Laboratory Receipt Date  
LEVEL: Sample Level  
PERSOLD: Sample Percent Solids  
SMPWTVL: Sample Weight (Soil Samples)/Initial Sample Volume (Water  
Samples)  
FINLVOL: Final Sample Volume  
METHOD: Method of Analysis  
STATLOC: Station Location

**Disclaimer:** ESAT verified the accuracy of the information reported in the Excel DST only for the following data fields: CASE, SDG, EPASAMP, MATRIX, ANALYTE, CONC, UNITS, ADJCRQL, VALDQAL, and PERSOLD. The data qualifiers in the VALDQAL column indicate the technical usability of the reported results.

## INORGANIC DATA QUALIFIER DEFINITIONS

The following definitions provide brief explanations of the ESAT-Region 6 qualifiers assigned to results in the Data Summary Table.

- U Not detected at reported quantitation limit.
- L Reported concentration is between the MDL and the CRQL.
- J Result is estimated because of outlying quality control parameters such as matrix spike, serial dilution, etc., or the result is below the CRQL.
- R Result is unusable.
- F A possibility of a false negative exists.
- UC Reported concentration should be used as a raised quantitation limit because of blank effects and/or laboratory or field contamination.
- + High biased. Actual concentration may be lower than the concentration reported.
- Low biased. Actual concentration may be higher than the concentration reported.
- W The result should be used with caution. The result was reported on a dry weight basis although the sample did not conform to the EPA Office of Water definition of a soil sample because of its high water content (>70% moisture).

CASE	SDG	EPASAMP	LABID	MATRIX	QCPCODE	ANDATE	ANTIME	CASNUM	ANALYTE	CONC	VALDQAL	UNITS	ADJCRL	SMPDATE	PRPDATE	LRDATE	LEVEL	PERSOLD	SMPWTVL	FINVOL	METHOD	STATLOC
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-36-0	Antimony	1.2	U	mg/kg	1.2	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-38-2	Arsenic	2.3		mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-39-3	Barium	27.8		mg/kg	5.8	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-41-7	Beryllium	0.58	U	mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-43-9	Cadmium	0.58	U	mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-47-3	Chromium	8.2		mg/kg	1.2	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-48-4	Cobalt	2.2		mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-50-8	Copper	5.0		mg/kg	1.2	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7439-92-1	Lead	3.8	J	mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7439-96-5	Manganese	110		mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-02-0	Nickel	5.1		mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7782-49-2	Selenium	2.9	U	mg/kg	2.9	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/23/2015	11:27:26	7440-22-4	Silver	0.58	U	mg/kg	0.58	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-28-0	Thallium	0.29	U	mg/kg	0.29	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-62-2	Vanadium	13.7		mg/kg	2.9	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/22/2015	13:43:54	7440-66-6	Zinc	6.2		mg/kg	1.2	12/09/2015	12/16/2015	12/12/2015	86.9	1	500	MS	P-03-SAND	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-36-0	Antimony	1.1	U	mg/kg	1.1	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-38-2	Arsenic	5.4		mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-39-3	Barium	40.5		mg/kg	5.7	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-41-7	Beryllium	0.57	U	mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-43-9	Cadmium	0.57	U	mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-47-3	Chromium	12.8		mg/kg	1.1	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-48-4	Cobalt	8.0		mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-50-8	Copper	13.1		mg/kg	1.1	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7439-92-1	Lead	56.2	J	mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7439-96-5	Manganese	109		mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-02-0	Nickel	18.5		mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7782-49-2	Selenium	2.9	U	mg/kg	2.9	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/23/2015	11:30:15	7440-22-4	Silver	0.57	U	mg/kg	0.57	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-28-0	Thallium	0.29	U	mg/kg	0.29	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-62-2	Vanadium	28.7		mg/kg	2.9	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/22/2015	13:47:56	7440-66-6	Zinc	7.1		mg/kg	1.1	12/10/2015	12/16/2015	12/12/2015	87.3	1	500	MS	WIL-AA-10	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/22/2015	13:54:39	7440-36-0	Antimony	1.2	U	mg/kg	1.2	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/22/2015	13:54:39	7440-38-2	Arsenic	3.5		mg/kg	0.61	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/22/2015	13:54:39	7440-39-3	Barium	72.5		mg/kg	6.1	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-41-7	Beryllium	1.2		mg/kg	1.2	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-43-9	Cadmium	1.2		mg/kg	1.2	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-47-3	Chromium	20.4		mg/kg	1.2	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-48-4	Cobalt	6.6		mg/kg	1.2	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-50-8	Copper	12.5		mg/kg	2.4	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/22/2015	13:54:39	7439-92-1	Lead	30.2	J	mg/kg	0.61	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7439-96-5	Manganese	158		mg/kg	0.61	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-02-0	Nickel	16.7		mg/kg	1.2	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/22/2015	13:54:39	7782-49-2	Selenium	3.0	U	mg/kg	3.0	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-22-4	Silver	1.2	U	mg/kg	1.2	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/22/2015	13:54:39	7440-28-0	Thallium	0.30	U	mg/kg	0.30	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/22/2015	13:54:39	7440-62-2	Vanadium	24.3		mg/kg	3.0	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/23/2015	13:44:15	7440-66-6	Zinc	28.2		mg/kg	2.4	12/10/2015	12/16/2015	12/12/2015	82.5	1	500	MS	WIL-AA-11	
45671	MF6R18	MF6R22	5120172-04	S	Field_Sample	12/22/2																





45671	MF6R18	MF6R24	5120172-06	S	Field_Sample	12/22/2015	15:55:23	7440-09-7	Potassium	1260	mg/kg	654	12/11/2015	12/16/2015	12/12/2015	76.4	1	100	P	TF-34-01
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/22/2015	15:59:48	7429-90-5	Aluminum	8990	mg/kg	23.4	12/11/2015	12/16/2015	12/12/2015	85.3	1	100	P	LOR-18
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/22/2015	15:59:48	7440-70-2	Calcium	586	U	586	12/11/2015	12/16/2015	12/12/2015	85.3	1	100	P	LOR-18
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/22/2015	15:59:48	7439-89-6	Iron	9500	mg/kg	11.7	12/11/2015	12/16/2015	12/12/2015	85.3	1	100	P	LOR-18
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/22/2015	15:59:48	7439-95-4	Magnesium	586	U	586	12/11/2015	12/16/2015	12/12/2015	85.3	1	100	P	LOR-18
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/22/2015	15:59:48	7440-09-7	Potassium	922	mg/kg	586	12/11/2015	12/16/2015	12/12/2015	85.3	1	100	P	LOR-18
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/22/2015	15:59:48	7440-23-5	Sodium	586	U	586	12/11/2015	12/16/2015	12/12/2015	85.3	1	100	P	LOR-18
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/22/2015	16:13:11	7429-90-5	Aluminum	10100	mg/kg	23.1	12/11/2015	12/16/2015	12/12/2015	86.6	1	100	P	FD-03
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/22/2015	16:13:11	7440-70-2	Calcium	577	U	577	12/11/2015	12/16/2015	12/12/2015	86.6	1	100	P	FD-03
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/22/2015	16:13:11	7439-89-6	Iron	9450	mg/kg	11.5	12/11/2015	12/16/2015	12/12/2015	86.6	1	100	P	FD-03
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/22/2015	16:13:11	7439-95-4	Magnesium	660	mg/kg	577	12/11/2015	12/16/2015	12/12/2015	86.6	1	100	P	FD-03
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/22/2015	16:13:11	7440-09-7	Potassium	949	mg/kg	577	12/11/2015	12/16/2015	12/12/2015	86.6	1	100	P	FD-03
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/22/2015	16:13:11	7440-23-5	Sodium	577	U	577	12/11/2015	12/16/2015	12/12/2015	86.6	1	100	P	FD-03
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/22/2015	16:17:38	7429-90-5	Aluminum	5330	mg/kg	23.5	12/11/2015	12/16/2015	12/12/2015	85.2	1	100	P	LOR-25A
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/22/2015	16:17:38	7440-70-2	Calcium	587	U	587	12/11/2015	12/16/2015	12/12/2015	85.2	1	100	P	LOR-25A
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/22/2015	16:17:38	7439-89-6	Iron	4220	mg/kg	11.7	12/11/2015	12/16/2015	12/12/2015	85.2	1	100	P	LOR-25A
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/22/2015	16:17:38	7439-95-4	Magnesium	587	U	587	12/11/2015	12/16/2015	12/12/2015	85.2	1	100	P	LOR-25A
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/22/2015	16:17:38	7440-09-7	Potassium	596	mg/kg	587	12/11/2015	12/16/2015	12/12/2015	85.2	1	100	P	LOR-25A
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/22/2015	16:17:38	7440-23-5	Sodium	587	U	587	12/11/2015	12/16/2015	12/12/2015	85.2	1	100	P	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/22/2015	16:22:06	7429-90-5	Aluminum	12700	mg/kg	23.5	12/11/2015	12/16/2015	12/12/2015	85.1	1	100	P	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/22/2015	16:22:06	7440-70-2	Calcium	1980	mg/kg	588	12/11/2015	12/16/2015	12/12/2015	85.1	1	100	P	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/22/2015	16:22:06	7439-89-6	Iron	9800	mg/kg	11.8	12/11/2015	12/16/2015	12/12/2015	85.1	1	100	P	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/22/2015	16:22:06	7439-95-4	Magnesium	946	mg/kg	588	12/11/2015	12/16/2015	12/12/2015	85.1	1	100	P	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/22/2015	16:22:06	7440-09-7	Potassium	1610	mg/kg	588	12/11/2015	12/16/2015	12/12/2015	85.1	1	100	P	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/22/2015	16:22:06	7440-23-5	Sodium	588	U	588	12/11/2015	12/16/2015	12/12/2015	85.1	1	100	P	LOR-25A
45671	MF6R18	MF6R18	5120172-01	S	Field_Sample	12/15/2015	14:44:37	7439-97-6	Mercury	0.0075	LJ	0.012	12/09/2015	12/15/2015	12/12/2015	86.9	0.5	100	CV	P-03-SAND
45671	MF6R18	MF6R20	5120172-02	S	Field_Sample	12/15/2015	14:47:09	7439-97-6	Mercury	0.012	LJ	0.11	12/10/2015	12/15/2015	12/12/2015	87.3	0.5	100	CV	WIL-AA-10
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/15/2015	14:49:41	7439-97-6	Mercury	0.023	LJ	0.12	12/10/2015	12/15/2015	12/12/2015	82.5	0.5	100	CV	WIL-AA-11
45671	MF6R18	MF6R22	5120172-04	S	Field_Sample	12/15/2015	14:52:13	7439-97-6	Mercury	0.028	LJ	0.12	12/10/2015	12/15/2015	12/12/2015	84.8	0.5	100	CV	WIL-AA-11
45671	MF6R18	MF6R23	5120172-05	S	Field_Sample	12/15/2015	14:54:44	7439-97-6	Mercury	0.0082	LJ	0.12	12/10/2015	12/15/2015	12/12/2015	83.8	0.5	100	CV	WIL-41
45671	MF6R18	MF6R24	5120172-06	S	Field_Sample	12/15/2015	14:57:15	7439-97-6	Mercury	0.017	LJ	0.13	12/11/2015	12/15/2015	12/12/2015	76.4	0.5	100	CV	TF-34-01
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/15/2015	14:59:46	7439-97-6	Mercury	0.0076	LJ	0.12	12/11/2015	12/15/2015	12/12/2015	85.3	0.5	100	CV	LOR-18
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/15/2015	15:02:18	7439-97-6	Mercury	0.0082	LJ	0.12	12/11/2015	12/15/2015	12/12/2015	86.6	0.5	100	CV	FD-03
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/15/2015	15:04:50	7439-97-6	Mercury	0.0051	LJ	0.12	12/11/2015	12/15/2015	12/12/2015	85.2	0.5	100	CV	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/15/2015	15:07:22	7439-97-6	Mercury	0.011	LJ	0.12	12/11/2015	12/15/2015	12/12/2015	85.1	0.5	100	CV	LOR-25A
45671	MF6R18	MF6R18	5120172-11	S	Field_Sample	12/15/2015	15:52:51	57-12-5	Cyanide	0.58	U	0.58	12/09/2015	12/15/2015	12/12/2015	86.9	1	50	AS	P-03-SAND
45671	MF6R18	MF6R20	5120172-12	S	Field_Sample	12/15/2015	15:53:41	57-12-5	Cyanide	0.57	U	0.57	12/10/2015	12/15/2015	12/12/2015	87.3	1	50	AS	WIL-AA-10
45671	MF6R18	MF6R21	5120172-03	S	Field_Sample	12/15/2015	15:54:31	57-12-5	Cyanide	0.61	U	0.61	12/10/2015	12/15/2015	12/12/2015	82.5	1	50	AS	WIL-AA-11
45671	MF6R18	MF6R22	5120172-04	S	Field_Sample	12/15/2015	15:55:21	57-12-5	Cyanide	0.59	U	0.59	12/10/2015	12/15/2015	12/12/2015	84.8	1	50	AS	WIL-AA-11
45671	MF6R18	MF6R23	5120172-05	S	Field_Sample	12/15/2015	15:56:11	57-12-5	Cyanide	0.60	U	0.60	12/10/2015	12/15/2015	12/12/2015	83.8	1	50	AS	WIL-41
45671	MF6R18	MF6R24	5120172-06	S	Field_Sample	12/15/2015	15:57:01	57-12-5	Cyanide	0.65	U	0.65	12/11/2015	12/15/2015	12/12/2015	76.4	1	50	AS	TF-34-01
45671	MF6R18	MF6R25	5120172-07	S	Field_Sample	12/15/2015	15:57:51	57-12-5	Cyanide	0.59	U	0.59	12/11/2015	12/15/2015	12/12/2015	85.3	1	50	AS	LOR-18
45671	MF6R18	MF6R26	5120172-08	S	Field_Sample	12/15/2015	16:00:21	57-12-5	Cyanide	0.58	U	0.58	12/11/2015	12/15/2015	12/12/2015	86.6	1	50	AS	FD-03
45671	MF6R18	MF6R27	5120172-09	S	Field_Sample	12/15/2015	16:01:11	57-12-5	Cyanide	0.59	U	0.59	12/11/2015	12/15/2015	12/12/2015	85.2	1	50	AS	LOR-25A
45671	MF6R18	MF6R28	5120172-10	S	Field_Sample	12/15/2015	16:02:01	57-12-5	Cyanide	0.59	U	0.59	12/11/2015	12/15/2015	12/12/2015	85.1	1	50	AS	LOR-25A

**INORGANIC/ORGANIC COMPLETE SDG FILE (CSF) INVENTORY CHECKLIST**

Case No. 45671	SDG No. MF6R18	SDG Nos. To Follow	Mod. Ref No. 2542.1	Date Rec. 12/30/15
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EPA Lab ID: BON	<b>ORIGINALS</b>	YES	NO	N/A
Lab Location: Hattiesburg, MS	<b>CUSTODY SEALS</b>			
Region: 6 Audit No.: 45671/MF6R18	1. Present on package?	X		
Re_Submitted CSF? Yes _____ No X _____	2. Intact upon receipt?	X		
Box No(s): 1	<b>FORM DC-2</b>			
COMMENTS:  14.15. Sample tags were not required for this case.	3. Numbering scheme accurate?	X		
	4. Are enclosed documents listed?	X		
	5. Are listed documents enclosed?	X		
	<b>FORM DC-1</b>			
	6. Present?	X		
	7. Complete?	X		
	8. Accurate?	X		
	<b>TRAFFIC REPORT /CHAIN-OF-CUSTODY RECORD(s)</b>			
	9. Signed?	X		
	10. Dated?	X		
	<b>AIRBILLS/AIRBILL STICKER</b>			
	11. Present?	X		
	12. Signed?	X		
	13. Dated?	X		
	<b>SAMPLE TAGS</b>			
	14. Does DC-1 list tags as being included?			X
	15. Present?			X
	<b>OTHER DOCUMENTS</b>			
	16. Complete?	X		
	17. Legible?	X		
	18. Original?	X		
Over for additional comments	18a. If "NO", does the copy indicate where original documents are located?			X

Audited by:

Audited by:

Signature

L. Hoffman / ESAT Data Reviewer

Date 12/31/15

Date \_\_\_\_\_

Printed Name/Title

DC-2

In Reference To: (I-0678)  
Case No.: 45671 SDG(s): MF6R18

Contract Laboratory Program  
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Resubmission Request

Laboratory Name: BON  
Lab Contact: Chris Bonner  
  
Region: 6  
Regional Contact: Raymond Flores - EPA  
ESAT Reviewer: Linda Hoffman - ESAT

In reference to data for the following fractions:

CSF Issue ICP-MS

Summary of Questions/Issues:

CSF Issue

On Form DC-2-1 (p. 6), corrections were made to Items 12 and 14, but these corrections were not initialed and dated. Please add the contract-required information (ISM02.3, p. E-17, sec. 5.6.7) and resubmit this page with proper pagination.

ICP-MS

1. The non-blank standard at or below the MA 2542.1 CRQL for thallium was not reported on Form 15 as required by Section II of MA 2542.1. Please make the necessary corrections and resubmissions with the pages properly paginated.
2. The Form 14s associated with the diluted analyses on the Form 12 on page 138 were not included in the data package. Please resubmit these contract-required forms with the pages properly paginated.

NOTE: Any submitted laboratory resubmission should be clearly marked as "Additional Data" with a cover letter included describing what data is being delivered, which Case the data pertains, and who requested the data (ISM02.3, p. B-9, sec. 2.2.1). Custody seals are required only for regular mail shipments.

Please respond to the above item within 5 business days (ISM02.3, p. B-9, sec. 2.2.1) by e-mail to Flores.Raymond@epa.gov. If you have any questions, please contact Mr. Flores at 281-983-2139.

Distribution: (1) Lab Copy, (2) Region Copy, and (3) ESAT Copy

## USEPA CLP COC (LAB COPY)

DateShipped: 12/11/2015

CarrierName: FedEx

AirbillNo: 859483220330

## CHAIN OF CUSTODY RECORD

No: 6-121115-162521-0013

Lab: Bonner Analytical Testing Company - BON

Case #: 45671

Cooler #:

EPCW14029  
MF6R18

Lab Contact: Chris Bonner

Lab Phone: 601-264-2854

Page 13 of 13

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
277-0019	MF6R18	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1139 (4 C) (1)	P-03-SAND	12/09/2015 12:10	
277-0021	MF6R20	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1153 (4 C) (1)	WIL-AA-10	12/10/2015 12:50	
277-0022	MF6R21	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1160 (4 C) (1)	WIL-AA-11	12/10/2015 13:55	
277-0023	MF6R22	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1167 (4 C) (1)	WIL-AA-11	12/10/2015 13:55	
277-0024	MF6R23	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1174 (4 C) (1)	WIL-41	12/10/2015 10:50	
277-0025	MF6R24	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1181 (4 C) (1)	TF-34-01	12/11/2015 10:05	
277-0026	MF6R25	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1188 (4 C) (1)	LOR-18	12/11/2015 11:20	
277-0027	MF6R26	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1195 (4 C) (1)	FD-03	12/11/2015 11:55	
277-0028	MF6R27	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1202 (4 C) (1)	LOR-25A	12/11/2015 13:55	
277-0029	MF6R28	Soil/ SERAS	Discrete Interval	TMs+Hg+Cn(21)	1209 (4 C) (1)	LOR-25A	12/11/2015 14:45	

Sample(s) to be used for Lab QC: 277-0026 Tag 1188 - Special Instructions: ICP-AES for Aluminum, Calcium, Iron, Magnesium, Potassium, Sodium.

ICP-MS for Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc

Analysis Key: TMs+Hg+Cn=TotalMetals ICP-AES +Hg+Cn by ISM02.3, ICP-MS by ISM02.3/MA#2542.1

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
Anal/Analysis	CJ/DRW LMS/ERAS	12/11/15 15:45	P. Hill Bon	12-12-15 1033	good

# **ADDENDUM**

# Data Validation Report

Page 1

## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### HoldingTimes\_Preservation

**NONE FOUND**

# Data Validation Report

Page 4

## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM023

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TUNE

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NONE FOUND

# Data Validation Report

Page 3

## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### InitialCalibration

**NONE FOUND**

# Data Validation Report

Page 4

## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON	SDG: MF6R18	Contract: EPW14029	Submission Group Id: 30113623
Lab Name: Bonner Analytical Testing Co.	Case: 45671	Client: EPA Region 6	SOW: ISM02.3

### Continuing Calibration Verification

**NONE FOUND**

Thu, 31 Dec 2015 11:30:55

**Data Validation Report****Data Review Results**

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

**Blanks****Method - Metals by ICP-AES****Test Name: EXES-1342**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

**Associated Samples: MF6R23, MF6R25, MF6R26, MF6R27, MF6R28**

Calcium	MF6R26, MF6R23, MF6R27, MF6R25
Magnesium	MF6R25, MF6R23, MF6R27
Sodium	MF6R23, MF6R27, MF6R26, MF6R25, MF6R28

**Test Name: EXES-478**

**Defect Message:** The following samples have analyte results greater than CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.

**Associated Samples: MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28**

Aluminum	MF6R24, MF6R26, MF6R18, MF6R25, MF6R28, MF6R23, MF6R22, MF6R21, MF6R20, MF6R27
Calcium	MF6R20, MF6R21, MF6R28, MF6R22, MF6R24, MF6R18
Iron	MF6R24, MF6R20, MF6R23, MF6R26, MF6R27, MF6R21, MF6R22, MF6R25, MF6R18, MF6R28
Magnesium	MF6R20, MF6R18, MF6R21, MF6R28, MF6R24, MF6R22, MF6R26
Potassium	MF6R20, MF6R26, MF6R28, MF6R18, MF6R23, MF6R27, MF6R21, MF6R22, MF6R24, MF6R25
Sodium	MF6R22, MF6R20, MF6R24, MF6R21, MF6R18

**Test Name: EXES-479**

**Defect Message:** The following samples have analyte results greater than CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.

**Associated Samples: MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28**

Aluminum	MF6R24, MF6R26, MF6R18, MF6R25, MF6R28, MF6R23, MF6R21, MF6R22, MF6R20, MF6R27
Calcium	MF6R21, MF6R22, MF6R20, MF6R28, MF6R24, MF6R18
Iron	MF6R20, MF6R24, MF6R23, MF6R27, MF6R26, MF6R21, MF6R22, MF6R25, MF6R18, MF6R28
Magnesium	MF6R20, MF6R18, MF6R21, MF6R28, MF6R24, MF6R22, MF6R26
Potassium	MF6R18, MF6R20, MF6R28, MF6R26, MF6R23, MF6R27, MF6R21, MF6R22, MF6R24, MF6R25
Sodium	MF6R22, MF6R20, MF6R24, MF6R21, MF6R18

# Data Validation Report

Page 1

## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

**Test Name: EXES-480**

**Defect Message:** The following samples are associated with CCB that has analyte results less than or equal to (-MDLs) but greater than or equal to (-CRQLs). Use Professional Judgement to qualify detects and nondetects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Aluminum	MF6R25, MF6R21, MF6R18, MF6R24, MF6R28, MF6R26, MF6R23, MF6R22, MF6R27, MF6R20
Calcium	MF6R21, MF6R24, MF6R20, MF6R25, MF6R23, MF6R26, MF6R28, MF6R22, MF6R18, MF6R27
Magnesium	MF6R25, MF6R20, MF6R18, MF6R21, MF6R28, MF6R24, MF6R22, MF6R23, MF6R26, MF6R27
Potassium	MF6R26, MF6R18, MF6R23, MF6R27, MF6R21, MF6R25, MF6R28, MF6R24, MF6R22, MF6R20
Sodium	MF6R20, MF6R21, MF6R18, MF6R22, MF6R23, MF6R25, MF6R24, MF6R27, MF6R26, MF6R28

**Test Name: EXES-481**

**Defect Message:** The following samples are associated with ICB that has analyte results less than or equal to (-MDLs) but greater than or equal to (-CRQLs). Use Professional Judgement to qualify detects and nondetects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Aluminum	MF6R25, MF6R22, MF6R24, MF6R28, MF6R26, MF6R23, MF6R21, MF6R27, MF6R20, MF6R18
Calcium	MF6R26, MF6R24, MF6R22, MF6R21, MF6R23, MF6R20, MF6R27, MF6R28, MF6R18, MF6R25
Magnesium	MF6R20, MF6R18, MF6R21, MF6R28, MF6R24, MF6R22, MF6R23, MF6R26, MF6R27, MF6R25
Potassium	MF6R18, MF6R20, MF6R22, MF6R26, MF6R23, MF6R27, MF6R21, MF6R25, MF6R28, MF6R24
Sodium	MF6R26, MF6R27, MF6R18, MF6R20, MF6R25, MF6R23, MF6R22, MF6R28, MF6R21, MF6R24

**Test Name: EXES-508**

**Defect Message:** The following samples have analyte results greater than CRQLs. The associated PB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Aluminum	MF6R26, MF6R27, MF6R22, MF6R21, MF6R28, MF6R24, MF6R18, MF6R23, MF6R25, MF6R20
Magnesium	MF6R22, MF6R18, MF6R26, MF6R24, MF6R28, MF6R21, MF6R20
Potassium	MF6R23, MF6R27, MF6R21, MF6R25, MF6R22, MF6R20, MF6R18, MF6R26, MF6R28, MF6R24

**Test Name: EXES-549**

**Defect Message:** The following samples are associated with PB that has analyte results less than or equal to (-MDL) but greater than or equal to (-CRQL). Use Professional Judgement to qualify detects and nondetects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Aluminum	MF6R27, MF6R22, MF6R21, MF6R23, MF6R18, MF6R28, MF6R25, MF6R20, MF6R26, MF6R24
Magnesium	MF6R18, MF6R21, MF6R28, MF6R24, MF6R26, MF6R23, MF6R22, MF6R27, MF6R25, MF6R20

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

**Test Name: EXES-549**

**Defect Message:** The following samples are associated with PB that has analyte results less than or equal to (-MDL) but greater than or equal to (-CRQL). Use Professional Judgement to qualify detects and nondetects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Potassium	MF6R20, MF6R18, MF6R22, MF6R23, MF6R28, MF6R25, MF6R27, MF6R21, MF6R26, MF6R24
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**Method - Metals by ICP-MS****Test Name: EXES-1342**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Beryllium	MF6R21, MF6R22
Silver	MF6R20, MF6R18, MF6R26, MF6R28, MF6R22, MF6R24, MF6R23, MF6R21, MF6R27, MF6R25

**Test Name: EXES-476**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Silver	MF6R27, MF6R21, MF6R20, MF6R18, MF6R28, MF6R25, MF6R22, MF6R24, MF6R23, MF6R26
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**Test Name: EXES-478**

**Defect Message:** The following samples have analyte results greater than CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Arsenic	MF6R28, MF6R20, MF6R21, MF6R18, MF6R23, MF6R22, MF6R26, MF6R25, MF6R27, MF6R24
Barium	MF6R22, MF6R24, MF6R28, MF6R26, MF6R23, MF6R27, MF6R20, MF6R21, MF6R25, MF6R18
Chromium	MF6R22, MF6R28, MF6R23, MF6R24, MF6R21, MF6R26, MF6R27, MF6R20, MF6R18, MF6R25
Cobalt	MF6R25, MF6R28, MF6R22, MF6R18, MF6R21, MF6R20, MF6R26, MF6R24, MF6R27, MF6R23
Copper	MF6R21, MF6R27, MF6R20, MF6R22, MF6R24, MF6R26, MF6R28, MF6R23, MF6R25, MF6R18
Lead	MF6R20, MF6R22, MF6R24, MF6R27, MF6R21, MF6R23, MF6R25, MF6R26, MF6R28, MF6R18
Manganese	MF6R24, MF6R26, MF6R27, MF6R25, MF6R21, MF6R28, MF6R18, MF6R22, MF6R23, MF6R20
Nickel	MF6R18, MF6R24, MF6R26, MF6R22, MF6R28, MF6R20, MF6R23, MF6R21, MF6R25, MF6R27
Vanadium	MF6R18, MF6R28, MF6R22, MF6R24, MF6R23, MF6R20, MF6R21, MF6R26, MF6R27, MF6R25

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

**Test Name: EXES-478**

**Defect Message:** The following samples have analyte results greater than CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Zinc	MF6R25, MF6R20, MF6R21, MF6R28, MF6R27, MF6R24, MF6R26, MF6R18, MF6R22, MF6R23
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**Test Name: EXES-479**

**Defect Message:** The following samples have analyte results greater than CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Arsenic	MF6R28, MF6R20, MF6R21, MF6R18, MF6R23, MF6R22, MF6R26, MF6R25, MF6R27, MF6R24
Barium	MF6R22, MF6R24, MF6R28, MF6R26, MF6R23, MF6R27, MF6R20, MF6R21, MF6R25, MF6R18
Chromium	MF6R22, MF6R28, MF6R23, MF6R24, MF6R21, MF6R26, MF6R27, MF6R20, MF6R18, MF6R25
Cobalt	MF6R25, MF6R28, MF6R22, MF6R18, MF6R21, MF6R20, MF6R26, MF6R24, MF6R27, MF6R23
Copper	MF6R21, MF6R27, MF6R20, MF6R22, MF6R24, MF6R26, MF6R28, MF6R23, MF6R25, MF6R18
Lead	MF6R20, MF6R22, MF6R24, MF6R27, MF6R21, MF6R23, MF6R25, MF6R26, MF6R28, MF6R18
Manganese	MF6R26, MF6R24, MF6R27, MF6R25, MF6R21, MF6R28, MF6R18, MF6R22, MF6R23, MF6R20
Nickel	MF6R24, MF6R18, MF6R26, MF6R28, MF6R22, MF6R20, MF6R23, MF6R21, MF6R25, MF6R27
Vanadium	MF6R18, MF6R28, MF6R22, MF6R24, MF6R23, MF6R20, MF6R21, MF6R26, MF6R27, MF6R25
Zinc	MF6R25, MF6R20, MF6R21, MF6R28, MF6R24, MF6R27, MF6R26, MF6R18, MF6R22, MF6R23

**Test Name: EXES-483**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated CCB has analyte results greater than CRQL. Detects are qualified as U. Sample results are reported at CRQLs.

**Associated Samples:** MF6R18, MF6R21

Thallium	MF6R21, MF6R18
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**Test Name: EXES-508**

**Defect Message:** The following samples have analyte results greater than CRQLs. The associated PB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Barium	MF6R22, MF6R28, MF6R24, MF6R26, MF6R23, MF6R27, MF6R20, MF6R21, MF6R25, MF6R18
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**Method - Cyanide**

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON	SDG: MF6R18	Contract: EPW14029	Submission Group Id: 30113623
Lab Name: Bonner Analytical Testing Co.	Case: 45671	Client: EPA Region 6	SOW: ISM02.3

**Test Name: EXES-1342**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

**Associated Samples:** MF6R18, MF6R20, MF6R22, MF6R27

Cyanide	MF6R20, MF6R18, MF6R22, MF6R27
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**Test Name: EXES-476**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

**Associated Samples:** MF6R18, MF6R20, MF6R22, MF6R27

Cyanide	MF6R20, MF6R18, MF6R22, MF6R27
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**Test Name: EXES-477**

**Defect Message:** The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

**Associated Samples:** MF6R18, MF6R20, MF6R22, MF6R27

Cyanide	MF6R20, MF6R18, MF6R22, MF6R27
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# Data Validation Report

## Data Review Results

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Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### InterferenceCheckSample

**NONE FOUND**

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### LaboratoryControlSample

**NONE FOUND**

# Data Validation Report

## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### MatrixSpikes

#### Method - Metals by ICP-MS

**Test Name:** EXES-594**Defect Message:** The following samples are associated with Matrix Spike sample that has spike analyte %R greater than 125% and Post-digestion spike analyte %R less than or equal to 125%. Detects are qualified as J. Nondetects are not qualified.**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Selenium

MF6R25A

#### Method - Cyanide

**Test Name:** EXES-1355**Defect Message:** The following samples are associated with Matrix Spike sample that has spike analyte %R within 30 - 74% and Post-digestion spike analyte %R greater than or equal to 75%. Detects are qualified as J. Nondetects are qualified as UJ.**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Cyanide

MF6R25A

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### SerialDilution

Method - Metals by ICP-MS

Test Name: EXES-1334

Defect Message: The following samples are associated to the Serial Dilution sample with analyte absolute value %D >10% and the original sample result is > 50xMDL.

Detects are qualified as estimated J. Non-detects are qualified estimated UJ.

Associated Samples: MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Cobalt	MF6R25L
Zinc	MF6R25L

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON	SDG: MF6R18	Contract: EPW14029	Submission Group Id: 30113623
Lab Name: Bonner Analytical Testing Co.	Case: 45671	Client: EPA Region 6	SOW: ISM02.3

### Internal Standard

NONE FOUND

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON	SDG: MF6R18	Contract: EPW14029	Submission Group Id: 30113623
Lab Name: Bonner Analytical Testing Co.	Case: 45671	Client: EPA Region 6	SOW: ISM02.3

### DetectionLimit

#### Method - Metals by ICP-AES

**Test Name:** EXES-790**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.**Associated Samples:** MF6R23, MF6R25, MF6R25L, MF6R26, MF6R27, MF6R28

Calcium	MF6R25D, MF6R27, MF6R25, MF6R23, MF6R25L, MF6R26
Magnesium	MF6R25L, MF6R25, MF6R27, MF6R23
Potassium	MF6R25L
Sodium	MF6R26, MF6R25D, MF6R28, MF6R23, MF6R27, MF6R25

#### Method - Metals by ICP-MS

**Test Name:** EXES-790**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R25L, MF6R26, MF6R27, MF6R28, PBS01

Antimony	MF6R23
Arsenic	MF6R25L
Barium	PBS01
Beryllium	MF6R25D, MF6R23, MF6R20, MF6R25L, MF6R24, MF6R27, MF6R21, MF6R22, MF6R26, MF6R28, MF6R18, MF6R25
Cadmium	MF6R24, MF6R23, MF6R25L, MF6R28
Selenium	MF6R22, MF6R24, MF6R28, MF6R25, MF6R20, MF6R21
Silver	MF6R20, MF6R26, MF6R25D, MF6R18, MF6R28, MF6R22, MF6R27, MF6R24, MF6R23, MF6R25L, MF6R21, MF6R25
Thallium	MF6R21, PBS01, MF6R18
Zinc	MF6R25L

#### Method - Mercury by Cold Vapor

# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

**Test Name:** EXES-790

**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

**Associated Samples:** MF6R18, MF6R20, MF6R21, MF6R22, MF6R23, MF6R24, MF6R25, MF6R26, MF6R27, MF6R28

Mercury	MF6R27, MF6R24, MF6R25, MF6R28, MF6R18, MF6R25D, MF6R22, MF6R26, MF6R23, MF6R21, MF6R20
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Method - Cyanide

**Test Name:** EXES-790

**Defect Message:** The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

**Associated Samples:** MF6R18, MF6R20, MF6R22, MF6R27, PBS01

Cyanide	MF6R25D, MF6R20, MF6R18, PBS01, MF6R22, MF6R27
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# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### Duplicates

#### Method - Metals by ICP-MS

Test Name: EXES-601

Defect Message: The following samples are associated with a Duplicate sample that has analyte results are greater than or equal to 5xCRQL in both Duplicate and original sanmples and RPD is greater than 20. Detects are qualified as J. Nondetects are qualified as UJ.

Associated Samples: MF6R25D

Lead	MF6R25D
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# Data Validation Report

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## Data Review Results

Thu, 31 Dec 2015 11:30:55

Lab Code: BON

SDG: MF6R18

Contract: EPW14029

Submission Group Id: 30113623

Lab Name: Bonner Analytical Testing Co.

Case: 45671

Client: EPA Region 6

SOW: ISM02.3

### Sample Analysis

NONE FOUND